Criteria for setting up of Nuclear Power Plants

2713. SHRI VARINDER SINGH BAJWA: Will the PRIME MINISTER be pleased to state:

(a) the criteria laid down for setting up Nuclear Power Plants;

(b) the States which have requested the Central Government to set up such plants; and

(c) the action taken by Government is each case ?

THE MINISTER OF STATE IN THE PRIME MINISTER'S OFFICE (SHRI PRITHVIRAJ CHAVAN): (a) While setting up nuclear power plants in the country, the technical suitability of the site, magnitude of land acquisition and rehabilitation of the affected population, availability of large water to meet the requirements of cooling water, population density, power evacuation, transportation of heavy equipment,other technical aspects like seismicity, foundation conditions, other energy options available in the region and the availability of financial resources are considered by the Department. Statutory clearances from the Atomic Energy Regulatory Board and the Ministry of Enviroment & Forests are also obtained before setting up a project.

(b) Government of Haryana, Jharkhand, Madhya Pradesh, Punjab and Uttar Pradesh have requested for setting up nuclear power projects in their respective States. In addition, in response to the request of Site Selection Committee (SSC) appointed by the Department in September 2005, the Government of Andhra Pradesh, Gujarat, Orissa and West Bengal have also offered sites for evaluation by the SSC.

(c) A Site Selection Committee is carrying out the work for deatiled assessment of each new sites.

Availability of Thorium

2714. SHRI T.T.V. DHINAKARAN: Will the PRIME MINISTER be pleased to state:

(a) the percentage of thorium used in nuclear reactors in the country out of the total nuclear fuel;

(b) the potential availability of thorium in the country as nuclear fuel; and

(c) the steps taken to increase use of thorium to avoid dependence on uranium import?

THE MINISTER OF STATE IN THE PRIME MINISTER'S OFFICE (SHRI PRITHVIRAJ CHAVAN) :(a) About 1% of the fuel bundles loaded in the first core of six 220 MWe Indian Pressurised Heavy Water Reactors *viz* Kakrapar Atomic Power Station 1 & 2, Kaiga Atomic Power Station 1 & 2 and Rajasthan Atomic Power Station 3 & 4 are made of thorium. In the first core of Rajasthan Atomic Station - 2 after retubing about 2.17% Thorium fuel bundles were loaded. Subsequent refuelings have been done only with uranium based fuel.

In addition, the entire code of the 30 KW Thermal Research Reactor KAMINI, located in Indira Gandhi Centre for Atomic Research is based on Uranium-233 fuel derived from thorium.

(b) The current estimates for mineable reserves of thorium in the country amount to approximately 2,25,000 tons metal.

(c) The three stage Indian Nuclear Power Programme is optimized to make maximum use of indigenous nuclear fuel resources including available uranium and the large thorium resources. Accordingly, the Pressurised Heavy Water Reactor and Fast Breeder Reactor based programmes are already in an advanced stage of implementation. The third stage of large scale deployment of thorium based fuel would require growth of the Indian Fast Breeder Reactor Programme for producing the required Uranium-233 in large quantities to support commercial reactors using thorium. In order to develop the associated technologies, a 300 MWe Advanced Heavy Water Reactor has been designed. The reactor will produce nearly two third of its power from thorium based fuel, while the remaining power will be produced from plutonium.

Preservation of fruits in Jammu and Kashmir

2715. SHRI T.S. BAJWA: Will the PRIME MINISTER be pleased to state:

(a) whether Bhabha Atomic Research Centre has developed a technique of long lasting preservation of fruits;

(b) if so, whether this technique has been tried in Jammu and Kashmir; and